

### **ABSTRACT OF THE DISCLOSURE**

An electronic circuit for controlling a laser system consisting of a pulse source and high power fiber amplifier is disclosed. The circuit is used to control the gain of the high power fiber amplifier system so that the amplified output pulses have predetermined pulse energy as the pulse width and repetition rate of the oscillator are varied. This includes keeping the pulse energy constant when the pulse train is turned on. The circuitry is also used to control the temperature of the high power fiber amplifier pump diode such that the wavelength of the pump diode is held at the optimum absorption wavelength of the fiber amplifier as the diode current is varied. The circuitry also provides a means of protecting the high power fiber amplifier from damage due to a loss of signal from the pulse source or from a pulse-source signal of insufficient injection energy.